



EXPRESS MAIL NO.: EL755732358US
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Andrew J. Flint and Deborah E. Cool
Application No. : 09/788,626
Filed : February 13, 2001
For : IMPROVED ASSAY FOR PROTEIN TYROSINE PHOSPHATASE
Art Unit : 1741
Docket No. : 200125.401
Date : June 5, 2001

Box Missing Parts
Assistant Commissioner for Patents
Washington, D.C. 20231

DECLARATION

Sir:

I, Monica Steinborn, in accordance with 37 C.F.R. § 1.821(f) do hereby declare that, to the best of my knowledge, the content of the paper entitled "Sequence Listing" and the computer readable copy contained within the floppy disk are the same.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Dated this 5th day of June, 2001.

Monica Steinborn

Monica Steinborn
Biotechnology Paralegal

701 Fifth Avenue, Suite 6300
Seattle, WA 98104-7092
(206) 622-4900
FAX (206) 682-6031

09/888,626

#6



SEQUENCE LISTING

<110> Flint, Andrew J.
Cool, Deborah E.

<120> IMPROVED ASSAY FOR PROTEIN TYROSINE
PHOSPHATES

<130> 200125.401

<140> US/09/788,626

<141> 2001-02-13

<160> 40

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<221> VARIANT

<222> (1)...(1)

<223> Xaa = Ile or Val

<221> VARIANT

<222> (4)...(4)

<223> Xaa = any amino acid

<221> VARIANT

<222> (7)...(7)

<223> Xaa = any amino acid

<221> VARIANT

<222> (8)...(8)

<223> Xaa = any amino acid

<221> VARIANT

<222> (10)...(10)

<223> Xaa = Ser or Thr

<223> Unique signature sequence motif which is invariant
among all PTPs.

<400> 1

Xaa His Cys Xaa Ala Gly Xaa Xaa Arg Xaa Gly
1 5 10

<210> 2

<211> 254

<212> PRT

009999 000000

<213> Homo sapiens

<400> 2

Asp Phe Pro Cys Arg Val Ala Lys Leu Pro Lys Asn Lys Asn Arg Asn
 1 5 10 15
 Arg Tyr Arg Asp Val Ser Pro Phe Asp His Ser Arg Ile Lys Leu His
 20 25 30
 Gln Glu Asp Asn Asp Tyr Ile Asn Ala Ser Leu Ile Lys Met Glu Glu
 35 40 45
 Ala Gln Arg Ser Tyr Ile Leu Thr Gln Gly Pro Leu Pro Asn Thr Cys
 50 55 60
 Gly His Phe Trp Glu Met Val Trp Glu Gln Lys Ser Arg Gly Val Val
 65 70 75 80
 Met Leu Asn Arg Val Met Glu Lys Gly Ser Leu Lys Cys Ala Gln Tyr
 85 90 95
 Trp Pro Gln Lys Glu Glu Lys Glu Met Ile Phe Glu Asp Thr Asn Leu
 100 105 110
 Lys Leu Thr Leu Ile Ser Glu Asp Ile Lys Ser Tyr Tyr Thr Val Leu
 115 120 125
 Glu Leu Glu Asn Leu Thr Thr Gln Glu Thr Arg Glu Ile Leu His Phe
 130 135 140
 His Tyr Thr Thr Trp Pro Asp Phe Gly Val Pro Glu Ser Pro Ala Ser
 145 150 155 160
 Phe Leu Asn Phe Leu Phe Lys Val Arg Glu Ser Gly Ser Leu Ser Pro
 165 170 175
 Glu His Gly Pro Val Val Val His Cys Ser Ala Gly Ile Gly Arg Ser
 180 185 190
 Gly Thr Phe Cys Leu Ala Asp Thr Cys Leu Leu Leu Met Asp Lys Arg
 195 200 205
 Lys Asp Pro Ser Ser Val Asp Ile Lys Lys Val Leu Leu Glu Met Arg
 210 215 220
 Lys Phe Arg Met Gly Leu Ile Gln Thr Ala Asp Gln Leu Arg Phe Ser
 225 230 235 240
 Tyr Leu Ala Val Ile Glu Gly Ala Lys Phe Ile Met Gly Asp
 245 250

<210> 3

<211> 251

<212> PRT

<213> Homo sapiens

<400> 3

Asp Tyr Pro His Arg Val Ala Lys Phe Pro Glu Asn Arg Asn Arg Asn
 1 5 10 15
 Arg Tyr Arg Asp Val Ser Pro Tyr Asp His Ser Arg Val Leu Gln Asn
 20 25 30
 Ala Glu Asn Asp Tyr Ile Asn Ala Ser Leu Val Asp Ile Glu Glu Ala
 35 40 45
 Gln Arg Ser Tyr Ile Leu Thr Gln Gly Pro Leu Pro Asn Thr Cys Cys
 50 55 60
 His Phe Trp Leu Met Val Trp Gln Gln Lys Thr Lys Ala Val Val Met
 65 70 75 80
 Leu Asn Arg Ile Val Glu Lys Glu Ser Val Lys Cys Ala Gln Tyr Trp
 85 90 95

```
<210> 4
<211> 317
<212> PRT
<213> Homo sapiens
```

<400> 4																
Gly	Ile	Thr	Ala	Asp	Ser	Ser	Asn	His	Pro	Asp	Asn	Lys	His	Lys	Asn	
1				5					10					15		
Arg	Tyr	Ile	Asn	Ile	Val	Ala	Tyr	Asp	His	Ser	Arg	Val	Lys	Leu	Ala	
			20					25					30			
Gln	Leu	Ala	Glu	Lys	Asp	Gly	Lys	Leu	Thr	Asp	Tyr	Ile	Asn	Ala	Asn	
		35					40					45				
Tyr	Val	Asp	Gly	Tyr	Asn	Arg	Pro	Lys	Ala	Tyr	Ile	Ala	Ala	Gln	Gly	
	50					55					60					
Pro	Leu	Lys	Ser	Thr	Ala	Glu	Asp	Phe	Trp	Arg	Met	Ile	Trp	Glu	His	
65					70					75					80	
Asn	Val	Glu	Val	Ile	Val	Met	Ile	Thr	Asn	Leu	Val	Glu	Lys	Gly	Arg	
				85					90					95		
Arg	Lys	Cys	Asp	Gln	Tyr	Trp	Pro	Pro	Ala	Asp	Gly	Ser	Glu	Glu	Tyr	
			100					105					110			
Gly	Asn	Phe	Leu	Val	Thr	Gln	Lys	Ser	Val	Gln	Val	Leu	Ala	Tyr	Tyr	
		115					120					125				
Thr	Val	Phe	Thr	Leu	Arg	Asn	Thr	Lys	Ile	Lys	Lys	Ser	Gln	Lys		
	130					135					140					
Gly	Arg	Pro	Ser	Gly	Arg	Val	Val	Thr	Gln	Tyr	His	Tyr	Thr	Gln	Trp	
145					150					155					160	
Pro	Asp	Met	Gly	Val	Pro	Glu	Tyr	Ser	Leu	Pro	Val	Leu	Thr	Phe	Val	
				165					170					175		
Arg	Lys	Ala	Ala	Tyr	Ala	Lys	Arg	His	Ala	Val	Gly	Pro	Val	Val	Val	
			180					185					190			
His	Cys	Ser	Ala	Gly	Val	Gly	Arg	Thr	Gly	Thr	Tyr	Ile	Val	Leu	Asp	
		195					200					205				
Ser	Met	Leu	Gln	Gln	Ile	Gln	His	Glu	Gly	Thr	Val	Asn	Ile	Phe	Gly	

```
<210> 5
<211> 316
<212> PRT
<213> Homo sapiens
```

<400>	5															
Gly	Ile	Thr	Ala	Asp	Ser	Ser	Asn	His	Pro	Asp	Asn	Lys	His	Lys	Asn	
1				5					10					15		
Arg	Tyr	Ile	Asn	Ile	Val	Ala	Tyr	Asp	His	Ser	Arg	Val	Lys	Leu	Ala	
			20					25					30			
Gln	Leu	Ala	Glu	Lys	Asp	Gly	Lys	Leu	Thr	Asp	Tyr	Ile	Asn	Ala	Asn	
		35					40					45				
Tyr	Val	Asp	Gly	Tyr	Asn	Arg	Pro	Lys	Ala	Tyr	Ile	Ala	Ala	Gln	Gly	
	50					55					60					
Pro	Leu	Lys	Ser	Thr	Ala	Glu	Asp	Phe	Trp	Arg	Met	Ile	Trp	Glu	His	
65					70					75					80	
Asn	Val	Glu	Val	Ile	Val	Met	Ile	Thr	Asn	Leu	Val	Glu	Lys	Gly	Arg	
				85					90					95		
Arg	Lys	Cys	Asp	Gln	Tyr	Trp	Pro	Ala	Asp	Gly	Ser	Glu	Glu	Tyr	Gly	
			100					105					110			
Asn	Phe	Leu	Val	Thr	Gln	Lys	Ser	Val	Gln	Val	Leu	Ala	Tyr	Tyr	Thr	
		115					120					125				
Val	Phe	Thr	Leu	Arg	Asn	Thr	Lys	Ile	Lys	Lys	Gly	Ser	Gln	Lys	Gly	
	130					135					140					
Arg	Pro	Ser	Gly	Arg	Val	Val	Thr	Gln	Tyr	His	Tyr	Thr	Gln	Trp	Pro	
145					150					155					160	
Asp	Met	Gly	Val	Pro	Glu	Tyr	Ser	Leu	Pro	Val	Leu	Thr	Phe	Val	Arg	
				165					170				175			
Lys	Ala	Ala	Tyr	Ala	Lys	Arg	His	Ala	Val	Gly	Pro	Val	Val	Val	His	
			180					185					190			
Cys	Ser	Ala	Gly	Val	Gly	Arg	Thr	Gly	Thr	Tyr	Ile	Val	Leu	Asp	Ser	
		195					200					205				
Met	Leu	Gln	Gln	Ile	Gln	His	Glu	Gly	Thr	Val	Asn	Ile	Phe	Gly	Phe	
	210					215					220					
Leu	Lys	His	Ile	Arg	Ser	Gln	Arg	Asn	Tyr	Leu	Val	Gln	Thr	Glu	Glu	
225					230					235					240	
Gln	Tyr	Val	Phe	Ile	His	Asp	Thr	Leu	Val	Glu	Ala	Ile	Leu	Ser	Lys	
				245					250					255		
Glu	Thr	Glu	Val	Val	Leu	Asp	Ser	Met	Leu	Gln	Gln	Ile	Gln	His	Glu	
			260					265					270			

```
<210> 6
<211> 319
<212> PRT
<213> Homo sapiens
```

<400>	6														
Asn	Ile	Thr	Ala	Glu	His	Ser	Asn	His	Pro	Glu	Asn	Lys	His	Lys	Asn
1				5					10					15	
Arg	Tyr	Ile	Asn	Ile	Leu	Ala	Tyr	Asp	His	Ser	Arg	Val	Lys	Leu	Arg
			20					25					30		
Pro	Leu	Pro	Gly	Lys	Asp	Ser	Lys	His	Ser	Asp	Tyr	Ile	Asn	Ala	Asn
		35					40					45			
Tyr	Val	Asp	Gly	Tyr	Asn	Lys	Ala	Lys	Ala	Tyr	Ile	Ala	Thr	Gln	Gly
	50					55					60				
Pro	Leu	Lys	Ser	Thr	Phe	Glu	Asp	Phe	Trp	Arg	Met	Ile	Trp	Glu	Gln
65					70					75					80
Asn	Thr	Gly	Ile	Ile	Val	Met	Ile	Thr	Asn	Leu	Val	Glu	Lys	Gly	Arg
				85					90					95	
Arg	Lys	Cys	Asp	Gln	Tyr	Trp	Pro	Thr	Glu	Asn	Ser	Glu	Glu	Tyr	Gly
			100					105					110		
Asn	Ile	Ile	Val	Thr	Leu	Lys	Ser	Thr	Lys	Ile	His	Ala	Cys	Tyr	Thr
	115						120					125			
Val	Phe	Ser	Ile	Arg	Asn	Thr	Lys	Val	Lys	Lys	Gly	Gln	Lys	Gly	Asn
	130					135					140				
Pro	Lys	Gly	Arg	Gln	Asn	Glu	Arg	Val	Val	Ile	Gln	Tyr	His	Tyr	Thr
145					150				155						160
Gln	Trp	Pro	Asp	Met	Gly	Val	Pro	Glu	Tyr	Ala	Leu	Pro	Val	Leu	Thr
			165					170						175	
Phe	Val	Arg	Arg	Ser	Ser	Ala	Ala	Arg	Met	Pro	Glu	Thr	Gly	Pro	Val
			180					185					190		
Leu	Val	His	Cys	Ser	Ala	Gly	Val	Gly	Arg	Thr	Gly	Thr	Tyr	Ile	Val
		195					200					205			
Ile	Asp	Ser	Met	Leu	Gln	Gln	Ile	Lys	Asp	Lys	Ser	Thr	Val	Asn	Val
	210					215					220				
Leu	Gly	Phe	Leu	Lys	His	Ile	Arg	Thr	Gln	Arg	Asn	Tyr	Leu	Val	Gln
225					230				235						240
Thr	Glu	Glu	Gln	Tyr	Ile	Phe	Ile	His	Asp	Ala	Leu	Leu	Glu	Ala	Ile
			245						250					255	
Leu	Gly	Lys	Glu	Thr	Glu	Val	Val	Ile	Asp	Ser	Met	Leu	Gln	Gln	Ile
			260					265					270		
Lys	Asp	Lys	Ser	Thr	Val	Asn	Val	Leu	Gly	Phe	Leu	Lys	His	Ile	Arg
		275					280					285			
Thr	Gln	Arg	Asn	Tyr	Leu	Val	Gln	Thr	Glu	Glu	Gln	Tyr	Ile	Phe	Ile
	290					295					300				
His	Asp	Ala	Leu	Leu	Glu	Ala	Ile	Leu	Gly	Lys	Glu	Thr	Glu	Val	
305					310					315					

<210> 7
 <211> 313
 <212> PRT
 <213> *Drosophila melanogaster*

<400> 7

Asp	Leu	Pro	Cys	Glu	His	Ser	Gln	His	Pro	Glu	Asn	Lys	Arg	Lys	Asn
1			5					10						15	
Arg	Tyr	Leu	Asn	Ile	Thr	Ala	Tyr	Asp	His	Ser	Arg	Val	His	Leu	His
		20					25					30			
Pro	Thr	Pro	Gly	Gln	Lys	Lys	Asn	Leu	Asp	Tyr	Ile	Asn	Ala	Asn	Phe
		35					40					45			
Ile	Asp	Gly	Tyr	Gln	Lys	Gly	His	Ala	Phe	Ile	Gly	Thr	Gln	Gly	Pro
	50					55					60				
Leu	Pro	Asp	Thr	Phe	Asp	Cys	Phe	Trp	Arg	Met	Ile	Trp	Glu	Gln	Arg
65				70					75						80
Val	Ala	Ile	Ile	Val	Met	Ile	Thr	Asn	Leu	Val	Glu	Arg	Gly	Arg	Arg
			85					90					95		
Lys	Cys	Asp	Met	Tyr	Trp	Pro	Lys	Asp	Gly	Val	Glu	Thr	Tyr	Gly	Val
			100					105					110		
Ile	Gln	Val	Lys	Leu	Ile	Glu	Glu	Glu	Val	Met	Ser	Thr	Tyr	Thr	Val
		115					120					125			
Leu	Gln	Ile	Lys	His	Leu	Lys	Leu	Lys	Lys	Lys	Lys	Gln	Cys	Asn	Thr
	130					135						140			
Glu	Lys	Leu	Val	Tyr	Gln	Tyr	His	Tyr	Thr	Asn	Trp	Pro	Asp	His	Gly
145					150					155					160
Thr	Pro	Asp	His	Pro	Leu	Pro	Val	Leu	Asn	Phe	Val	Lys	Lys	Ser	Ser
			165						170					175	
Ala	Ala	Asn	Pro	Ala	Glu	Ala	Gly	Pro	Ile	Val	Val	His	Cys	Ser	Ala
		180						185					190		
Gly	Val	Gly	Arg	Thr	Gly	Thr	Tyr	Ile	Val	Leu	Asp	Ala	Met	Leu	Lys
		195					200					205			
Gln	Ile	Gln	Gln	Lys	Asn	Ile	Val	Asn	Val	Phe	Gly	Phe	Leu	Arg	His
	210					215					220				
Ile	Arg	Ala	Gln	Arg	Asn	Phe	Leu	Val	Gln	Thr	Glu	Glu	Gln	Tyr	Ile
225					230					235					240
Phe	Leu	His	Asp	Ala	Leu	Val	Glu	Ala	Ile	Ala	Ser	Gly	Glu	Thr	Asn
			245						250					255	
Leu	Val	Leu	Asp	Ala	Met	Leu	Lys	Gln	Ile	Gln	Gln	Lys	Asn	Ile	Val
		260						265					270		
Asn	Val	Phe	Gly	Phe	Leu	Arg	His	Ile	Arg	Ala	Gln	Arg	Asn	Phe	Leu
		275					280					285			
Val	Gln	Thr	Glu	Glu	Gln	Tyr	Ile	Phe	Leu	His	Asp	Ala	Leu	Val	Glu
	290					295					300				
Ala	Ile	Ala	Ser	Gly	Glu	Thr	Asn	Leu							
305						310									

<210> 8
 <211> 306
 <212> PRT
 <213> *Homo sapiens*

<400> 8

Gln Phe Thr Trp Glu Asn Ser Asn Leu Glu Val Asn Lys Pro Lys Asn

0978333606001

1 5 10 15
 Arg Tyr Ala Asn Val Ile Ala Tyr Asp His Ser Arg Val Ile Leu Thr
 20 25 30
 Ser Ile Asp Gly Val Pro Gly Ser Asp Tyr Ile Asn Ala Asn Tyr Ile
 35 40 45
 Asp Gly Tyr Arg Lys Gln Asn Ala Tyr Ile Ala Thr Gln Gly Pro Leu
 50 55 60
 Pro Glu Thr Met Gly Asp Phe Trp Arg Met Val Trp Glu Gln Arg Thr
 65 70 75 80
 Ala Thr Val Val Met Met Thr Arg Leu Glu Glu Lys Ser Arg Val Lys
 85 90 95
 Cys Asp Gln Tyr Trp Pro Ala Arg Gly Thr Glu Thr Cys Gly Leu Ile
 100 105 110
 Gln Val Thr Leu Leu Asp Thr Val Glu Leu Ala Thr Tyr Thr Val Phe
 115 120 125
 Ala Leu His Lys Ser Gly Ser Ser Glu Lys Arg Glu Leu Arg Gln Phe
 130 135 140
 Gln Phe Met Ala Trp Pro Asp His Gly Val Pro Glu Tyr Pro Thr Pro
 145 150 155 160
 Ile Leu Ala Phe Leu Arg Arg Val Lys Ala Cys Asn Pro Leu Asp Ala
 165 170 175
 Gly Pro Met Val Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Cys
 180 185 190
 Phe Ile Val Ile Asp Ala Met Leu Glu Arg Met Lys His Glu Lys Thr
 195 200 205
 Val Asp Ile Tyr Gly His Val Thr Cys Met Arg Ser Gln Arg Asn Tyr
 210 215 220
 Met Val Gln Thr Glu Asp Gln Tyr Val Phe Ile His Glu Ala Leu Leu
 225 230 235 240
 Glu Ala Ala Thr Cys Gly His Thr Glu Val Val Ile Asp Ala Met Leu
 245 250 255
 Glu Arg Met Lys His Glu Lys Thr Val Asp Ile Tyr Gly His Val Thr
 260 265 270
 Cys Met Arg Ser Gln Arg Asn Tyr Met Val Gln Thr Glu Asp Gln Tyr
 275 280 285
 Val Phe Ile His Glu Ala Leu Leu Glu Ala Ala Thr Cys Gly His Thr
 290 295 300
 Glu Val
 305

<210> 9
 <211> 305
 <212> PRT
 <213> Homo sapiens

<400> 9
 Ser Ala Pro Trp Asp Ser Ala Lys Lys Asp Glu Asn Arg Met Lys Asn
 1 5 10 15
 Arg Tyr Gly Asn Ile Ile Ala Tyr Asp His Ser Arg Val Arg Leu Gln
 20 25 30
 Thr Ile Glu Gly Asp Thr Asn Ser Asp Tyr Ile Asn Gly Asn Tyr Ile
 35 40 45
 Asp Gly Tyr His Arg Pro Asn His Tyr Ile Ala Thr Gln Gly Pro Met
 50 55 60

Gln Glu Thr Ile Tyr Asp Phe Trp Arg Met Val Trp His Glu Asn Thr
 65 70 75 80
 Ala Ser Ile Ile Met Val Thr Asn Leu Val Glu Val Gly Arg Val Lys
 85 90 95
 Cys Cys Lys Tyr Trp Pro Asp Asp Thr Glu Ile Tyr Lys Asp Ile Lys
 100 105 110
 Val Thr Leu Ile Glu Thr Glu Leu Leu Ala Glu Tyr Val Ile Phe Ala
 115 120 125
 Val Glu Lys Arg Gly Val His Glu Ile Arg Glu Ile Arg Gln Phe His
 130 135 140
 Phe Thr Gly Trp Pro Asp His Gly Val Pro Tyr His Ala Thr Gly Leu
 145 150 155 160
 Leu Gly Phe Val Arg Gln Val Lys Ser Lys Ser Pro Pro Ser Ala Gly
 165 170 175
 Pro Leu Val Val His Cys Ser Ala Gly Ala Gly Arg Thr Gly Cys Phe
 180 185 190
 Ile Val Ile Asp Ile Met Leu Asp Met Ala Glu Arg Glu Gly Val Val
 195 200 205
 Asp Ile Tyr Asn Cys Val Arg Glu Leu Arg Ser Arg Arg Val Asn Met
 210 215 220
 Val Gln Thr Glu Glu Gln Tyr Val Phe Ile His Asp Ala Ile Leu Glu
 225 230 235 240
 Ala Cys Leu Cys Gly Asp Thr Ser Val Val Ile Asp Ile Met Leu Asp
 245 250 255
 Met Ala Glu Arg Glu Gly Val Val Asp Ile Tyr Asn Cys Val Arg Glu
 260 265 270
 Leu Arg Ser Arg Arg Val Asn Met Val Gln Thr Glu Glu Gln Tyr Val
 275 280 285
 Phe Ile His Asp Ala Ile Leu Glu Ala Cys Leu Cys Gly Asp Thr Ser
 290 295 300
 Val
 305

<210> 10
 <211> 310
 <212> PRT
 <213> Homo sapiens

<400> 10
 Gln Ala Thr Cys Glu Ala Ala Ser Lys Glu Glu Asn Lys Glu Lys Asn
 1 5 10 15
 Arg Tyr Val Asn Ile Leu Pro Tyr Asp His Ser Arg Val His Leu Thr
 20 25 30
 Pro Val Glu Gly Val Pro Asp Ser Asp Tyr Ile Asn Ala Ser Phe Ile
 35 40 45
 Asn Gly Tyr Gln Glu Lys Asn Lys Phe Ile Ala Ala Gln Gly Pro Lys
 50 55 60
 Glu Glu Thr Val Asn Asp Phe Trp Arg Met Ile Trp Glu Gln Asn Thr
 65 70 75 80
 Ala Thr Ile Val Met Val Thr Asn Leu Lys Glu Arg Lys Glu Cys Lys
 85 90 95
 Cys Ala Gln Tyr Trp Pro Asp Gln Gly Cys Trp Thr Tyr Gly Asn Ile
 100 105 110
 Arg Val Ser Val Glu Asp Val Thr Val Leu Val Asp Tyr Thr Val Phe

T03090" 3233650

```
<210> 11
<211> 309
<212> PRT
<213> Homo sapiens
```

<400> 11																
Gln	Gly	Thr	Phe	Glu	Leu	Ala	Asn	Lys	Glu	Glu	Asn	Arg	Glu	Lys	Asn	
1				5					10					15		
Arg	Tyr	Pro	Asn	Ile	Leu	Pro	Asn	Asp	His	Ser	Arg	Val	Ile	Leu	Ser	
			20					25					30			
Gln	Leu	Asp	Gly	Ile	Pro	Cys	Ser	Asp	Tyr	Ile	Asn	Ala	Ser	Tyr	Ile	
		35					40					45				
Asp	Gly	Tyr	Lys	Glu	Lys	Asn	Lys	Phe	Ile	Ala	Ala	Gln	Gly	Pro	Lys	
	50					55					60					
Gln	Glu	Thr	Val	Asn	Asp	Phe	Trp	Arg	Met	Val	Trp	Glu	Gln	Lys	Ser	
65					70					75					80	
Ala	Thr	Ile	Val	Met	Leu	Thr	Asn	Leu	Lys	Glu	Arg	Lys	Glu	Glu	Lys	
				85					90					95		
Cys	His	Gln	Tyr	Trp	Pro	Asp	Gln	Gly	Cys	Trp	Thr	Tyr	Gly	Asn	Ile	
			100					105					110			
Arg	Val	Cys	Val	Glu	Asp	Cys	Val	Val	Leu	Val	Asp	Tyr	Thr	Ile	Phe	
		115					120					125				
Cys	Ile	Gln	Pro	Gln	Leu	Pro	Asp	Gly	Cys	Lys	Ala	Pro	Arg	Leu	Val	
	130					135					140					
Ser	Gln	Leu	His	Phe	Thr	Ser	Trp	Pro	Asp	Phe	Gly	Val	Pro	Phe	Thr	
145					150					155					160	
Pro	Ile	Gly	Met	Leu	Lys	Phe	Leu	Lys	Lys	Val	Lys	Thr	Leu	Asn	Pro	
				165					170					175		

Val His Ala Gly Pro Ile Val Val His Cys Ser Ala Gly Val Gly Arg
 180 185 190
 Thr Gly Thr Phe Ile Val Ile Asp Ala Met Met Ala Met Met His Ala
 195 200 205
 Glu Gln Lys Val Asp Val Phe Glu Phe Val Ser Arg Ile Arg Asn Gln
 210 215 220
 Arg Pro Gln Met Val Gln Thr Asp Met Gln Tyr Thr Phe Ile Tyr Gln
 225 230 235 240
 Ala Leu Leu Glu Tyr Tyr Leu Tyr Gly Asp Thr Glu Leu Val Ile Asp
 245 250 255
 Ala Met Met Ala Met Met His Ala Glu Gln Lys Val Asp Val Phe Glu
 260 265 270
 Phe Val Ser Arg Ile Arg Asn Gln Arg Pro Gln Met Val Gln Thr Asp
 275 280 285
 Met Gln Tyr Thr Phe Ile Tyr Gln Ala Leu Leu Glu Tyr Tyr Leu Tyr
 290 295 300
 Gly Asp Thr Glu Leu
 305

<210> 12
 <211> 309
 <212> PRT
 <213> Mus musculus

<400> 12

Lys Phe Pro Ile Lys Asp Ala Arg Lys Pro His Asn Gln Asn Lys Asn
 1 5 10 15
 Arg Tyr Val Asp Ile Leu Pro Tyr Asp Tyr Asn Arg Val Glu Leu Ser
 20 25 30
 Glu Ile Asn Gly Asp Ala Gly Ser Thr Tyr Ile Asn Ala Ser Tyr Ile
 35 40 45
 Asp Gly Phe Lys Glu Pro Arg Lys Tyr Ile Ala Ala Gln Gly Pro Arg
 50 55 60
 Asp Glu Thr Val Asp Asp Phe Trp Arg Met Ile Trp Glu Gln Lys Ala
 65 70 75 80
 Thr Val Ile Val Met Val Thr Arg Cys Glu Glu Gly Asn Arg Asn Lys
 85 90 95
 Cys Ala Glu Tyr Trp Pro Ser Met Glu Glu Gly Thr Arg Ala Phe Lys
 100 105 110
 Asp Ile Val Val Thr Ile Asn Asp His Lys Arg Cys Pro Asp Tyr Ile
 115 120 125
 Ile Leu Asn Val Ala His Lys Lys Glu Lys Ala Thr Gly Arg Glu Val
 130 135 140
 Thr His Ile Gln Phe Thr Ser Trp Pro Asp His Gly Val Pro Glu Asp
 145 150 155 160
 Pro His Leu Leu Leu Lys Leu Arg Arg Arg Val Asn Ala Phe Ser Asn
 165 170 175
 Phe Phe Ser Gly Pro Ile Val Val His Cys Ser Ala Gly Val Gly Arg
 180 185 190
 Thr Gly Thr Tyr Ile Gly Ile Asp Ala Met Leu Glu Gly Leu Glu Ala
 195 200 205
 Glu Gly Lys Val Asp Val Tyr Gly Tyr Val Val Lys Leu Arg Arg Gln
 210 215 220
 Arg Cys Leu Met Val Gln Val Glu Ala Gln Tyr Ile Leu Ile His Gln

0078866 060401

```
<210> 13
<211> 325
<212> PRT
<213> Homo sapiens
```

<400>	13															
Leu	Tyr	Ser	Arg	Lys	Glu	Gly	Gln	Arg	Gln	Glu	Asn	Lys	Asn	Lys	Asn	
1				5					10					15		
Arg	Tyr	Lys	Asn	Ile	Leu	Pro	Phe	Asp	His	Thr	Arg	Val	Val	Leu	His	
			20					25					30			
Asp	Gly	Asp	Pro	Asn	Glu	Pro	Val	Ser	Asp	Tyr	Ile	Asn	Ala	Asn	Ile	
		35					40					45				
Ile	Met	Pro	Glu	Phe	Glu	Thr	Lys	Cys	Asn	Asn	Ser	Lys	Pro	Lys	Lys	
	50					55					60					
Ser	Tyr	Ile	Ala	Thr	Gln	Gly	Cys	Leu	Gln	Asn	Thr	Val	Asn	Asp	Phe	
65					70					75					80	
Trp	Arg	Met	Val	Phe	Gln	Glu	Asn	Ser	Arg	Val	Ile	Val	Met	Thr	Thr	
				85					90					95		
Lys	Glu	Val	Glu	Arg	Gly	Lys	Ser	Lys	Cys	Val	Lys	Tyr	Trp	Pro	Asp	
			100					105					110			
Glu	Tyr	Ala	Leu	Lys	Glu	Tyr	Gly	Val	Met	Arg	Val	Arg	Asn	Val	Lys	
		115					120					125				
Glu	Ser	Ala	Ala	His	Asp	Tyr	Thr	Leu	Leu	Lys	Leu	Ser	Lys	Val	Gly	
	130					135					140					
Gln	Gly	Asn	Thr	Glu	Arg	Thr	Val	Trp	Gln	Tyr	His	Phe	Arg	Thr	Trp	
145					150					155					160	
Pro	Asp	His	Gly	Val	Pro	Ser	Asp	Pro	Gly	Gly	Val	Leu	Asp	Phe	Leu	
				165					170					175		
Glu	Glu	Val	His	His	Lys	Gln	Glu	Ser	Ile	Met	Asp	Ala	Gly	Pro	Val	
			180					185					190			
Val	Val	His	Cys	Ser	Ala	Gly	Ile	Gly	Arg	Thr	Gly	Thr	Phe	Ile	Val	
		195					200					205				
Ile	Asp	Ile	Leu	Ile	Asp	Ile	Ile	Arg	Glu	Lys	Gly	Val	Asp	Cys	Asp	
	210					215					220					
Ile	Asp	Val	Pro	Lys	Thr	Ile	Gln	Met	Val	Arg	Ser	Gln	Arg	Ser	Gly	
225					230					235					240	
Met	Val	Gln	Thr	Glu	Ala	Gln	Tyr	Arg	Phe	Ile	Tyr	Met	Ala	Val	Gln	
				245					250					255		
His	Tyr	Ile	Glu	Thr	Leu	Gln	Arg	Arg	Ile	Val	Ile	Asp	Ile	Leu	Ile	
			260					265				270				
Asp	Ile	Ile	Arg	Glu	Lys	Gly	Val	Asp	Cys	Asp	Ile	Asp	Val	Pro	Lys	
		275					280					285				

```
<210> 14
<211> 322
<212> PRT
<213> Homo sapiens
```

[illegible]

[illegible]

```
<210> 16
<211> 309
<212> PRT
<213> Drosophila melanogaster
```

<400> 16

```

Asp Gln Pro Cys Thr Phe Ala Asp Leu Pro Cys Asn Arg Pro Lys Asn
 1          5          10          15
Arg Phe Thr Asn Ile Leu Pro Tyr Asp His Ser Arg Phe Lys Leu Gln
          20          25          30
Pro Val Asp Asp Asp Glu Gly Ser Asp Tyr Ile Asn Ala Asn Tyr Val
          35          40          45
Pro Gly His Asn Ser Pro Arg Glu Phe Ile Val Thr Gln Gly Pro Leu
          50          55          60
His Ser Thr Arg Asp Asp Phe Trp Arg Met Cys Trp Glu Ser Asn Ser
65          70          75          80
Arg Ala Ile Val Met Leu Thr Arg Cys Phe Glu Lys Gly Arg Glu Lys
          85          90          95
Cys Asp Gln Tyr Trp Pro Asn Asp Thr Val Pro Val Phe Tyr Gly Asp
          100          105          110
Ile Lys Val Gln Ile Leu Asn Asp Ser His Tyr Ala Asp Trp Val Met
          115          120          125
Phe Met Leu Cys Arg Gly Ser Glu Gln Arg Ile Leu Arg His Phe His
          130          135          140
Phe Thr Thr Trp Pro Asp Phe Gly Val Pro Asn Pro Pro Gln Thr Leu
145          150          155          160
Val Arg Phe Val Arg Ala Phe Arg Asp Arg Ile Cys Ala Glu Gln Arg
          165          170          175
Pro Ile Val Val His Cys Ser Ala Gly Val Gly Arg Ser Gly Thr Phe
          180          185          190
Ile Thr Leu Asp Arg Ile Leu Gln Gln Ile Asn Thr Ser Asp Tyr Val
          195          200          205
Asp Ile Phe Gly Ile Val Tyr Ala Met Arg Lys Glu Arg Val Trp Met
          210          215          220
Val Gln Thr Glu Gln Gln Tyr Ile Cys Ile His Gln Cys Leu Leu Ala
225          230          235          240
Val Leu Glu Gly Lys Glu Asn Ile Val Gly Pro Thr Leu Asp Arg Ile
          245          250          255
Leu Gln Gln Ile Asn Thr Ser Asp Tyr Val Asp Ile Phe Gly Ile Val
          260          265          270
Tyr Ala Met Arg Glu Lys Arg Val Trp Met Val Gln Thr Glu Gln Gln
          275          280          285
Tyr Ile Cys Ile His Gln Cys Leu Leu Ala Val Leu Glu Gly Lys Glu
          290          295          300
Asn Ile Val Gly Pro
305

```

<210> 17

<211> 313

<212> PRT

<213> Homo sapiens

<400> 17

```

Ser Gln Ser Gln Met Val Ala Ser Ala Ser Glu Asn Asn Ala Lys Asn
 1          5          10          15
Arg Tyr Arg Asn Val Leu Pro Tyr Asp Trp Ser Arg Val Pro Leu Lys
          20          25          30
Pro Ile His Glu Glu Pro Gly Ser Asp Tyr Ile Asn Ala Ser Phe Met
          35          40          45

```

1030303293260

Pro	Gly 50	Leu	Trp	Ser	Pro	Gln 55	Glu	Phe	Ile	Ala	Thr 60	Gln	Gly	Pro	Leu
Pro 65	Gln	Thr	Val	Gly 70	Asp	Phe	Trp	Arg	Leu	Val 75	Trp	Glu	Gln	Gln	Ser 80
His	Thr	Leu	Val	Met 85	Leu	Thr	Asn	Cys	Met 90	Glu	Ala	Gly	Arg	Val 95	Lys
Cys	Glu	His	Tyr 100	Trp	Pro	Leu	Asp	Ser 105	Gln	Pro	Cys	Thr	His	Gly	His
Leu	Arg	Val 115	Thr	Leu	Val	Gly	Glu 120	Glu	Val	Met	Glu	Asn	Trp	Thr	Val
Leu 130	Leu	Leu	Leu	Gln	Val	Glu 135	Glu	Gln	Lys	Thr	Leu 140	Ser	Val	Arg	Gln
Phe 145	His	Tyr	Gln	Ala	Trp 150	Pro	Asp	His	Gly	Val 155	Pro	Ser	Ser	Pro	Asp 160
Thr	Leu	Leu	Ala	Phe 165	Trp	Arg	Met	Leu	Arg 170	Gln	Trp	Leu	Asp	Gln	Thr 175
Met	Glu	Gly	Gly 180	Pro	Pro	Ile	Val 185	His	Cys	Ser	Ala	Gly	Val 190	Gly	Arg
Thr	Gly	Thr 195	Leu	Ile	Ala	Leu	Asp 200	Val	Leu	Leu	Arg	Gln 205	Leu	Gln	Ser
Glu	Gly 210	Leu	Leu	Gly	Pro	Phe 215	Ser	Phe	Val	Arg	Lys 220	Met	Arg	Glu	Ser
Arg 225	Pro	Leu	Met	Val	Gln 230	Thr	Glu	Ala	Gln	Tyr 235	Val	Phe	Leu	His	Gln 240
Cys	Ile	Cys	Gly	Ser 245	Ser	Asn	Ser	Gln	Pro	Arg 250	Pro	Gln	Pro	Arg	Ala
Leu	Asp	Val	Leu 260	Leu	Arg	Gln	Leu	Gln	Ser 265	Glu	Gly	Leu	Leu	Gly	Pro
Phe	Ser	Phe 275	Val	Arg	Lys	Met	Arg 280	Glu	Ser	Arg	Pro	Leu 285	Met	Val	Gln
Thr	Glu 290	Ala	Gln	Tyr	Val	Phe 295	Leu	His	Gln	Cys 300	Ile	Cys	Gly	Ser	Ser
Asn 305	Ser	Gln	Pro	Arg	Pro 310	Gln	Pro	Arg							

```
<210> 18
<211> 291
<212> PRT
<213> Rattus norvegicus
```

<400> 18																
Phe	Val	Asp	Pro	Lys	Glu	Tyr	Asp	Ile	Pro	Gly	Leu	Val	Arg	Lys	Asn	
1				5					10					15		
Arg	Tyr	Lys	Thr	Ile	Leu	Pro	Asn	Pro	His	Ser	Arg	Val	Arg	Leu	Thr	
			20					25					30			
Ser	Pro	Asp	Pro	Glu	Asp	Pro	Leu	Ser	Ser	Tyr	Ile	Asn	Ala	Asn	Tyr	
		35					40					45				
Ile	Arg	Gly	Tyr	Asn	Gly	Glu	Glu	Lys	Val	Tyr	Ile	Ala	Thr	Gln	Gly	
	50				55						60					
Pro	Ile	Val	Ser	Thr	Val	Val	Asp	Phe	Trp	Arg	Met	Val	Trp	Gln	Glu	
65					70					75					80	
Arg	Thr	Pro	Ile	Ile	Val	Met	Ile	Thr	Asn	Ile	Glu	Glu	Met	Asn	Glu	
				85					90					95		
Lys	Cys	Thr	Glu	Tyr	Trp	Pro	Glu	Glu	Gln	Val	Val	His	Asp	Gly	Val	


```
<210> 19
<211> 313
<212> PRT
<213> Drosophila melanogaster
```

<400>	19															
Asp	Arg	Thr	Thr	Lys	Asn	Ser	Asp	Leu	Lys	Glu	Asn	Ala	Cys	Lys	Asn	
1				5					10					15		
Arg	Tyr	Pro	Asp	Ile	Lys	Ala	Tyr	Asp	Gln	Thr	Arg	Val	Lys	Leu	Ala	
			20					25					30			
Val	Ile	Asn	Gly	Leu	Gln	Thr	Thr	Asp	Tyr	Ile	Asn	Ala	Asn	Phe	Val	
			35				40					45				
Ile	Gly	Tyr	Lys	Glu	Arg	Lys	Lys	Phe	Ile	Cys	Ala	Gln	Gly	Pro	Met	
	50					55					60					
Glu	Ser	Thr	Ile	Asp	Asp	Phe	Trp	Arg	Met	Ile	Trp	Glu	Gln	His	Leu	
65					70					75					80	
Glu	Ile	Ile	Val	Ile	Leu	Thr	Asn	Leu	Glu	Glu	Tyr	Asn	Lys	Ala	Lys	
				85					90					95		
Cys	Ala	Lys	Tyr	Trp	Pro	Glu	Lys	Val	Phe	Asp	Thr	Lys	Gln	Phe	Gly	
			100					105					110			
Asp	Ile	Leu	Val	Lys	Phe	Ala	Gln	Glu	Arg	Lys	Thr	Gly	Asp	Tyr	Ile	
			115				120					125				
Glu	Leu	Asn	Val	Ser	Lys	Asn	Lys	Ala	Asn	Val	Gly	Glu	Glu	Glu	Asp	
	130					135					140					
Arg	Arg	Gln	Ile	Thr	Gln	Tyr	His	Tyr	Leu	Thr	Trp	Lys	Asp	Phe	Met	
145					150					155					160	
Ala	Pro	Glu	His	Pro	His	Gly	Ile	Ile	Lys	Phe	Ile	Arg	Gln	Ile	Asn	
				165					170					175		

Gln Thr Lys Glu Gln Tyr Glu Leu Val His Arg Ala Ile Ala Gln Leu
 290 295 300
 Phe Glu Lys Gln Leu Gln Leu Tyr
 305 310

<210> 22
 <211> 291
 <212> PRT
 <213> Homo sapiens

<400> 22
 Gly Leu Ala Ile Thr Phe Ala Lys Leu Pro Gln Asn Leu Asp Lys Asn
 1 5 10 15
 Arg Tyr Lys Asp Val Leu Pro Tyr Asp Thr Thr Arg Val Leu Leu Gln
 20 25 30
 Gly Asn Glu Asp Tyr Ile Asn Ala Ser Tyr Val Asn Met Glu Ile Pro
 35 40 45
 Ala Ala Asn Leu Val Asn Lys Tyr Ile Ala Thr Gln Gly Pro Leu Pro
 50 55 60
 His Thr Cys Ala Gln Phe Trp Gln Val Val Trp Asp Gln Lys Leu Ser
 65 70 75 80
 Leu Ile Val Met Leu Thr Thr Leu Thr Glu Arg Gly Arg Thr Lys Cys
 85 90 95
 His Gln Tyr Trp Pro Asp Pro Pro Asp Val Met Asn His Gly Gly Phe
 100 105 110
 His Ile Gln Cys Gln Ser Glu Asp Cys Thr Ile Ala Tyr Val Ser Met
 115 120 125
 Leu Val Thr Asn Thr Gln Thr Gly Glu Glu His Thr Val Thr His Leu
 130 135 140
 Gln Tyr Val Ala Trp Pro Asp His Gly Ile Pro Asp Asp Ser Ser Asp
 145 150 155 160
 Phe Leu Glu Phe Val Asn Tyr Val Arg Ser Leu Arg Val Asp Ser Glu
 165 170 175
 Pro Val Leu Val His Cys Ser Ala Gly Ile Gly Arg Thr Gly Val Leu
 180 185 190
 Val Thr Met Glu Thr Ala Met Cys Leu Thr Glu Arg Asn Leu Pro Ile
 195 200 205
 Tyr Pro Leu Asp Ile Val Arg Lys Met Arg Asp Gln Arg Ala Met Met
 210 215 220
 Val Gln Thr Ser Ser Gln Tyr Lys Phe Val Cys Glu Ala Ile Leu Arg
 225 230 235 240
 Val Tyr Thr Met Glu Thr Ala Met Cys Leu Thr Glu Arg Asn Leu Pro
 245 250 255
 Ile Tyr Pro Leu Asp Ile Val Arg Lys Met Arg Asp Gln Arg Ala Met
 260 265 270
 Met Val Gln Thr Ser Ser Gln Tyr Lys Phe Val Cys Glu Ala Ile Leu
 275 280 285
 Arg Val Tyr
 290

<210> 23
 <211> 341
 <212> PRT
 <213> Dictyostelium discoideum

<400> 23

Pro Ser Glu Thr Ser Glu Gly Asp Lys Lys His Asn Thr Ser Lys Asn
 1 5 10 15
 Arg Tyr Thr Asn Ile Leu Pro Val Asn His Thr Arg Val Gln Leu Lys
 20 25 30
 Lys Ile Gln Asp Lys Glu Gly Ser Asp Tyr Ile Asn Ala Asn Tyr Ile
 35 40 45
 Asp Gly Ala Tyr Pro Lys Gln Phe Ile Cys Thr Gln Gly Pro Leu Pro
 50 55 60
 Asn Thr Ile Ala Asp Phe Trp Arg Met Val Trp Glu Asn Arg Cys Arg
 65 70 75 80
 Ile Ile Val Met Leu Ser Arg Glu Ser Glu Gly Ser Glu Asn Cys Arg
 85 90 95
 Ile Lys Cys Asp Arg Tyr Trp Pro Glu Gln Ile Gly Gly Glu Gln Phe
 100 105 110
 Ser Ile Tyr Gly Asn Gly Asn Glu Val Phe Gly Thr Tyr Ser Val Glu
 115 120 125
 Leu Val Glu Val Ile Gln Cys Arg Glu Ile Ile Thr Arg Asn Ile Arg
 130 135 140
 Leu Thr Phe Glu Gly Glu Thr Arg Asp Ile Thr Gln Tyr Gln Tyr Glu
 145 150 155 160
 Gly Trp Pro Asp His Asn Ile Pro Asp His Thr Gln Pro Phe Arg Gln
 165 170 175
 Leu Leu His Ser Ile Thr Asn Arg Gln Asn Gln Ile Ile Pro Ser Ser
 180 185 190
 Asp Arg Asn Val Pro Ile Ile Val His Cys Ser Ala Gly Val Gly Arg
 195 200 205
 Thr Gly Thr Phe Cys Thr Ala Val Ile Met Met Lys Lys Leu Asp His
 210 215 220
 Tyr Phe Lys Gln Leu Asp Tyr Asn Ser Arg Ile Asp Phe Asn Leu Phe
 225 230 235 240
 Ser Ile Val Leu Lys Leu Arg Glu Gln Arg Pro Gly Met Val Gln Gln
 245 250 255
 Leu Glu Gln Tyr Leu Phe Cys Tyr Lys Thr Ile Leu Asp Glu Ile Tyr
 260 265 270
 His Arg Leu Asn Cys Thr Ala Val Ile Met Met Lys Lys Leu Asp His
 275 280 285
 Tyr Phe Lys Gln Leu Asp Tyr Asn Ser Arg Ile Asp Phe Asn Leu Phe
 290 295 300
 Ser Ile Val Leu Lys Leu Arg Glu Gln Arg Pro Gly Met Val Gln Gln
 305 310 315 320
 Leu Glu Gln Tyr Leu Phe Cys Tyr Lys Thr Ile Leu Asp Glu Ile Tyr
 325 330 335
 His Arg Leu Asn Cys
 340

<210> 24

<211> 312

<212> PRT

<213> Schizosaccaromyces pombe

<400> 24

Gln Trp Ser Thr Val Asp Ser Leu Ser Asn Thr Ser Tyr Lys Lys Asn

1 5 10 15
 Arg Tyr Thr Asp Ile Val Pro Tyr Asn Cys Thr Arg Val His Leu Lys
 20 25 30
 Arg Thr Ser Pro Ser Glu Leu Asp Tyr Ile Asn Ala Ser Phe Ile Lys
 35 40 45
 Thr Glu Thr Ser Asn Tyr Ile Ala Cys Gln Gly Ser Ile Ser Arg Ser
 50 55 60
 Ile Ser Asp Phe Trp His Met Val Trp Asp Asn Val Glu Asn Ile Gly
 65 70 75 80
 Thr Ile Val Met Leu Gly Ser Leu Phe Glu Ala Gly Arg Glu Met Cys
 85 90 95
 Thr Ala Tyr Trp Pro Ser Asn Gly Ile Gly Asp Lys Gln Val Tyr Gly
 100 105 110
 Asp Tyr Cys Val Lys Gln Ile Ser Glu Glu Asn Val Asp Asn Ser Arg
 115 120 125
 Phe Ile Leu Phe Glu Ile Gln Asn Ala Asn Phe Pro Ser Val Lys Lys
 130 135 140
 Val His His Tyr Gln Tyr Pro Asn Trp Ser Asp Cys Asn Ser Pro Glu
 145 150 155 160
 Asn Val Lys Ser Met Val Glu Phe Leu Lys Tyr Val Asn Asn Ser His
 165 170 175
 Gly Ser Gly Asn Thr Ile Val His Cys Ser Ala Gly Val Gly Arg Thr
 180 185 190
 Gly Thr Phe Ile Val Leu Asp Thr Ile Leu Arg Phe Pro Glu Ser Lys
 195 200 205
 Leu Ser Gly Phe Asn Pro Ser Val Ala Asp Ser Ser Asp Val Val Phe
 210 215 220
 Gln Leu Val Asp His Ile Arg Lys Gln Arg Met Lys Met Val Gln Thr
 225 230 235 240
 Phe Thr Gln Phe Lys Tyr Val Tyr Asp Leu Ile Asp Ser Leu Val Leu
 245 250 255
 Asp Thr Ile Leu Arg Phe Pro Glu Ser Lys Leu Ser Gly Phe Asn Pro
 260 265 270
 Ser Val Ala Asp Ser Ser Asp Val Val Phe Gln Leu Val Asp His Ile
 275 280 285
 Arg Lys Gln Arg Met Lys Met Val Gln Thr Phe Thr Gln Phe Lys Tyr
 290 295 300
 Val Tyr Asp Leu Ile Asp Ser Leu
 305 310

<210> 25

<211> 307

<212> PRT

<213> Schizosaccaromyces pombe

<400> 25

Trp Cys Cys Leu Ala Ser Ser Arg Ser Thr Ser Ile Ser Arg Lys Asn
 1 5 10 15
 Arg Tyr Thr Asp Ile Val Pro Tyr Asp Lys Thr Arg Val Arg Leu Ala
 20 25 30
 Val Pro Lys Gly Cys Ser Asp Tyr Ile Asn Ala Ser His Ile Asp Val
 35 40 45
 Gly Asn Lys Lys Tyr Ile Ala Cys Gln Ala Pro Lys Pro Gly Thr Leu
 50 55 60

Leu Asp Phe Trp Glu Met Val Trp His Asn Ser Gly Thr Asn Gly Val
 65 70 75 80
 Ile Val Met Leu Thr Asn Leu Tyr Glu Ala Gly Ser Glu Lys Cys Ser
 85 90 95
 Gln Tyr Trp Pro Asp Asn Lys Asp His Ala Leu Cys Leu Glu Gly Gly
 100 105 110
 Leu Arg Ile Ser Val Gln Lys Tyr Glu Thr Phe Glu Asp Leu Lys Val
 115 120 125
 His Leu Phe Arg Leu Asp Lys Pro Asn Gly Pro Pro Lys Tyr Ile His
 130 135 140
 His Phe Trp Val His Thr Trp Phe Asp Lys Thr His Pro Asp Ile Glu
 145 150 155 160
 Ser Ile Thr Gly Leu Ile Arg Cys Ile Asp Lys Val Pro Asn Asp Gly
 165 170 175
 Pro Met Phe Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Phe
 180 185 190
 Ile Ala Val Asp Gln Ile Leu Gln Val Pro Lys Asn Ile Leu Pro Lys
 195 200 205
 Thr Thr Asn Leu Glu Asp Ser Lys Asp Phe Ile Phe Asn Cys Val Asn
 210 215 220
 Ser Leu Arg Ser Gln Arg Met Lys Met Val Gln Asn Phe Glu Gln Phe
 225 230 235 240
 Lys Phe Leu Tyr Asp Val Val Asp Tyr Leu Ala Val Asp Gln Ile Leu
 245 250 255
 Gln Val Pro Lys Asn Ile Leu Pro Lys Thr Thr Asn Leu Glu Asp Ser
 260 265 270
 Lys Asp Phe Ile Phe Asn Cys Val Asn Ser Leu Arg Ser Gln Arg Met
 275 280 285
 Lys Met Val Gln Asn Phe Glu Gln Phe Lys Phe Leu Tyr Asp Val Val
 290 295 300
 Asp Tyr Leu
 305

<210> 26
 <211> 316
 <212> PRT
 <213> Homo sapiens

<400> 26
 Gly Ile Thr Ala Asp Ser Ser Asn His Pro Asp Asn Lys His Lys Asn
 1 5 10 15
 Arg Tyr Ile Asn Ile Val Ala Tyr Asp His Ser Arg Val Lys Leu Ala
 20 25 30
 Gln Leu Ala Glu Lys Asp Gly Lys Leu Thr Asp Tyr Ile Asn Ala Asn
 35 40 45
 Tyr Val Asp Gly Tyr Asn Arg Pro Lys Ala Tyr Ile Ala Ala Gln Gly
 50 55 60
 Pro Leu Lys Ser Thr Ala Glu Asp Phe Trp Arg Met Ile Trp Glu His
 65 70 75 80
 Asn Val Glu Val Ile Val Met Ile Thr Asn Leu Val Glu Lys Gly Arg
 85 90 95
 Arg Lys Cys Asp Gln Tyr Trp Pro Ala Asp Gly Ser Glu Glu Tyr Gly
 100 105 110
 Asn Phe Leu Val Thr Gln Lys Ser Val Gln Val Leu Ala Tyr Tyr Thr

115 120 125
 Val Phe Thr Leu Arg Asn Thr Lys Ile Lys Lys Gly Ser Gln Lys Gly
 130 135 140
 Arg Pro Ser Gly Arg Val Val Thr Gln Tyr His Tyr Thr Gln Trp Pro
 145 150 155 160
 Asp Met Gly Val Pro Glu Tyr Ser Leu Pro Val Leu Thr Phe Val Arg
 165 170 175
 Lys Ala Ala Tyr Ala Lys Arg His Ala Val Gly Pro Val Val Val His
 180 185 190
 Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Tyr Ile Val Leu Asp Ser
 195 200 205
 Met Leu Gln Gln Ile Gln His Glu Gly Thr Val Asn Ile Phe Gly Phe
 210 215 220
 Leu Lys His Ile Arg Ser Gln Arg Asn Tyr Leu Val Gln Thr Glu Glu
 225 230 235 240
 Gln Tyr Val Phe Ile His Asp Thr Leu Val Glu Ala Ile Leu Ser Lys
 245 250 255
 Glu Thr Glu Val Val Leu Asp Ser Met Leu Gln Gln Ile Gln His Glu
 260 265 270
 Gly Thr Val Asn Ile Phe Gly Phe Leu Lys His Ile Arg Ser Gln Arg
 275 280 285
 Asn Tyr Leu Val Gln Thr Glu Glu Gln Tyr Val Phe Ile His Asp Thr
 290 295 300
 Leu Val Glu Ala Ile Leu Ser Lys Glu Thr Glu Val
 305 310 315

<210> 27
 <211> 294
 <212> PRT
 <213> Homo sapiens

<400> 27
 Thr Ser Arg Phe Ile Ser Ala Asn Leu Pro Cys Asn Lys Phe Lys Asn
 1 5 10 15
 Arg Leu Val Asn Ile Met Pro Tyr Glu Leu Thr Arg Val Cys Leu Gln
 20 25 30
 Pro Ile Arg Gly Val Glu Gly Ser Asp Tyr Ile Asn Ala Ser Phe Leu
 35 40 45
 Asp Gly Tyr Arg Gln Gln Lys Ala Tyr Ile Ala Thr Gln Gly Pro Leu
 50 55 60
 Ala Glu Ser Thr Glu Asp Phe Trp Arg Met Leu Trp Glu His Asn Ser
 65 70 75 80
 Thr Ile Ile Val Met Leu Thr Lys Leu Arg Glu Met Gly Arg Glu Lys
 85 90 95
 Cys His Gln Tyr Trp Pro Ala Glu Arg Ser Ala Arg Tyr Gln Tyr Phe
 100 105 110
 Val Val Asp Pro Met Ala Glu Tyr Asn Met Pro Gln Tyr Ile Leu Phe
 115 120 125
 Lys Val Thr Asp Ala Arg Asp Gly Gln Ser Arg Thr Ile Arg Gln Phe
 130 135 140
 Gln Phe Thr Asp Trp Pro Glu Gln Gly Val Pro Lys Thr Gly Glu Gly
 145 150 155 160
 Phe Ile Asp Phe Ile Gly Gln Val His Lys Thr Lys Glu Gln Phe Gly
 165 170 175

Gln Asp Gly Pro Ile Thr Val His Cys Ser Ala Gly Val Gly Arg Thr
 180 185 190
 Gly Val Phe Ile Thr Leu Ser Ile Val Leu Glu Arg Met Arg Tyr Glu
 195 200 205
 Gly Val Val Asp Met Phe Gln Thr Val Lys Thr Leu Arg Thr Gln Arg
 210 215 220
 Pro Ala Met Val Gln Thr Glu Asp Gln Tyr Gln Leu Cys Tyr Arg Ala
 225 230 235 240
 Ala Leu Glu Tyr Leu Thr Leu Ser Ile Val Leu Glu Arg Met Arg Tyr
 245 250 255
 Glu Gly Val Val Asp Met Phe Gln Thr Val Lys Thr Leu Arg Thr Gln
 260 265 270
 Arg Pro Ala Met Val Gln Thr Glu Asp Gln Tyr Gln Leu Cys Tyr Arg
 275 280 285
 Ala Ala Leu Glu Tyr Leu
 290

<210> 28
 <211> 281
 <212> PRT
 <213> Homo sapiens

<400> 28
 Asn Asp Lys Met Arg Thr Gly Asn Leu Pro Ala Asn Met Lys Lys Asn
 1 5 10 15
 Arg Val Leu Gln Ile Ile Pro Tyr Glu Phe Asn Arg Val Ile Ile Pro
 20 25 30
 Val Lys Arg Gly Glu Asn Asp Lys Met Arg Thr Gly Asn Leu Pro Ala
 35 40 45
 Asn Met Lys Lys Asn Arg Val Leu Gln Ile Ile Pro Tyr Glu Phe Asn
 50 55 60
 Arg Val Ile Ile Pro Val Lys Arg Gly Glu Glu Asn Thr Asp Tyr Val
 65 70 75 80
 Asn Ala Ser Phe Ile Asp Gly Tyr Arg Gln Lys Asp Ser Tyr Ile Ala
 85 90 95
 Ser Gln Gly Pro Leu Leu His Thr Ile Glu Asp Phe Trp Arg Met Ile
 100 105 110
 Trp Glu Trp Lys Ser Cys Ser Ile Val Met Leu Thr Glu Leu Glu Glu
 115 120 125
 Arg Gly Gln Glu Lys Cys Ala Gln Tyr Trp Pro Ser Asp Gly Leu Val
 130 135 140
 Ser Tyr Gly Asp Ile Thr Val Glu Leu Lys Lys Glu Glu Glu Cys Glu
 145 150 155 160
 Ser Tyr Thr Val Leu Leu Val Thr Asn Thr Arg Glu Asn Lys Ser Arg
 165 170 175
 Gln Ile Arg Gln Phe His Phe His Gly Trp Pro Glu Val Gly Ile Pro
 180 185 190
 Ser Asp Gly Lys Gly Met Ile Ser Ile Ile Ala Ala Val Gln Lys Gln
 195 200 205
 Gln Gln Gln Ser Gly Asn His Pro Ile Thr Val His Cys Ser Ala Gly
 210 215 220
 Ala Gly Arg Thr Gly Thr Phe Cys Ala Leu Ser Thr Val Leu Glu Arg
 225 230 235 240
 Val Lys Ala Glu Gly Ile Leu Asp Val Phe Gln Thr Val Lys Ser Leu

T03030-0233260

```
<210> 29
<211> 298
<212> PRT
<213> Homo sapiens
```

```
<210> 30
<211> 301
<212> PRT
```

<213> Homo sapiens

<400> 30

Val	Glu	Asp	Cys	Ser	Ile	Ala	Leu	Leu	Pro	Arg	Asn	His	Glu	Lys	Asn
1				5					10					15	
Arg	Cys	Met	Asp	Ile	Leu	Pro	Pro	Asp	Arg	Cys	Leu	Pro	Phe	Leu	Ile
			20					25					30		
Thr	Ile	Asp	Gly	Glu	Ser	Ser	Asn	Tyr	Ile	Asn	Ala	Ala	Leu	Met	Asp
		35					40				45				
Ser	Tyr	Lys	Gln	Pro	Ser	Ala	Phe	Ile	Val	Thr	Gln	His	Pro	Leu	Pro
	50					55				60					
Asn	Thr	Val	Lys	Asp	Phe	Trp	Arg	Leu	Val	Leu	Asp	Tyr	His	Cys	Thr
65					70				75					80	
Ser	Val	Val	Met	Leu	Asn	Asp	Val	Asp	Pro	Ala	Gln	Leu	Cys	Pro	Gln
			85					90					95		
Tyr	Trp	Pro	Glu	Asn	Gly	Val	His	Arg	His	Gly	Pro	Ile	Gln	Val	Glu
		100						105					110		
Phe	Val	Ser	Ala	Asp	Leu	Glu	Glu	Asp	Ile	Ile	Ser	Phe	Arg	Ile	Tyr
		115					120					125			
Asn	Ala	Ala	Arg	Pro	Gln	Asp	Gly	Tyr	Arg	Met	Val	Gln	Gln	Phe	Gln
	130					135					140				
Phe	Leu	Gly	Trp	Pro	Met	Tyr	Arg	Asp	Thr	Pro	Val	Ser	Lys	Arg	Ser
145					150				155					160	
Phe	Leu	Lys	Leu	Ile	Arg	Gln	Val	Asp	Lys	Trp	Gln	Glu	Glu	Tyr	Asn
			165					170						175	
Gly	Gly	Glu	Gly	Pro	Thr	Val	Val	His	Cys	Leu	Asn	Gly	Gly	Gly	Arg
		180						185					190		
Ser	Gly	Thr	Phe	Cys	Ala	Ile	Ser	Ile	Val	Cys	Glu	Met	Leu	Arg	His
	195					200						205			
Gln	Arg	Thr	Val	Asp	Val	Phe	His	Ala	Val	Lys	Thr	Leu	Arg	Asn	Asn
	210					215					220				
Lys	Pro	Asn	Met	Val	Asp	Leu	Leu	Asp	Gln	Tyr	Lys	Phe	Cys	Tyr	Glu
225					230				235					240	
Val	Ala	Leu	Glu	Tyr	Leu	Asn	Ser	Gly	Ala	Ile	Ser	Ile	Val	Cys	Glu
			245					250						255	
Met	Leu	Arg	His	Gly	Arg	Thr	Val	Asp	Val	Phe	His	Ala	Val	Lys	Thr
		260				265						270			
Leu	Arg	Asn	Asn	Lys	Pro	Asn	Met	Val	Asp	Leu	Leu	Asp	Gln	Tyr	Lys
	275					280						285			
Phe	Cys	Tyr	Glu	Val	Ala	Leu	Glu	Tyr	Leu	Asn	Ser	Gly			
	290					295					300				

<210> 31

<211> 333

<212> PRT

<213> Mus musculus

<400> 31

Trp	Arg	Thr	Gln	His	Ile	Gly	Asn	Gln	Glu	Glu	Asn	Lys	Lys	Lys	Asn
1				5					10					15	
Arg	Asn	Ser	Asn	Val	Val	Pro	Tyr	Asp	Phe	Asn	Arg	Val	Pro	Leu	Lys
			20					25					30		
His	Glu	Leu	Glu	Met	Ser	Lys	Glu	Ser	Glu	Pro	Glu	Ser	Asp	Glu	Ser
		35					40					45			

Ser Asp Asp Asp Ser Asp Ser Glu Glu Thr Ser Lys Tyr Ile Asn Ala
 50 55 60
 Ser Phe Val Met Ser Tyr Trp Lys Pro Glu Met Met Ile Ala Ala Gln
 65 70 75 80
 Gly Pro Leu Lys Glu Thr Ile Gly Asp Phe Trp Gln Met Ile Phe Gln
 85 90 95
 Arg Lys Val Lys Val Ile Val Met Leu Thr Glu Leu Val Asn Gly Asp
 100 105 110
 Gln Glu Val Cys Ala Gln Tyr Trp Gly Glu Gly Lys Gln Thr Tyr Gly
 115 120 125
 Asp Met Glu Val Glu Met Lys Asp Thr Asn Arg Ala Ser Ala Tyr Thr
 130 135 140
 Leu Phe Glu Leu Arg His Ser Lys Arg Lys Glu Pro Arg Thr Val Tyr
 145 150 155 160
 Gln Tyr Gln Cys Thr Thr Trp Lys Gly Glu Glu Leu Pro Ala Glu Pro
 165 170 175
 Lys Asp Leu Val Ser Met Ile Gln Asp Leu Lys Gln Lys Leu Pro Lys
 180 185 190
 Ala Ser Pro Glu Gly Met Lys Tyr His Lys His Ala Ser Ile Leu Val
 195 200 205
 His Cys Arg Asp Gly Ser Gln Gln Thr Gly Leu Phe Cys Ala Leu Phe
 210 215 220
 Asn Leu Leu Glu Ser Ala Glu Thr Glu Asp Val Val Asp Val Phe Gln
 225 230 235 240
 Val Val Lys Ser Leu Arg Lys Ala Arg Pro Gly Val Val Cys Ser Tyr
 245 250 255
 Glu Gln Tyr Gln Phe Leu Tyr Asp Ile Ile Ala Ser Ile Tyr Pro Ala
 260 265 270
 Gln Asn Gly Gln Val Ala Leu Phe Asn Leu Leu Glu Ser Ala Glu Thr
 275 280 285
 Glu Asp Val Val Asp Val Phe Gln Val Val Lys Ser Leu Arg Lys Ala
 290 295 300
 Arg Pro Gly Val Val Cys Ser Tyr Glu Gln Tyr Gln Phe Leu Tyr Asp
 305 310 315 320
 Ile Ile Ala Ser Ile Tyr Pro Ala Gln Asn Gly Gln Val
 325 330

<210> 32

<211> 295

<212> PRT

<213> *Drosophila melanogaster*

<400> 32

Ser Lys Ser Cys Ser Val Gly Glu Asn Glu Glu Asn Asn Met Lys Asn
 1 5 10 15
 Arg Ser Gln Glu Ile Ile Pro Tyr Asp Arg Asn Arg Val Ile Leu Thr
 20 25 30
 Pro Leu Pro Met Arg Glu Asn Ser Thr Tyr Ile Asn Ala Ser Phe Ile
 35 40 45
 Glu Gly Tyr Asp Asn Ser Glu Thr Phe Ile Ile Ala Gln Asp Pro Phe
 50 55 60
 Glu Asn Thr Ile Gly Asp Phe Trp Arg Met Ile Ser Glu Gln Ser Val
 65 70 75 80
 Thr Thr Leu Val Met Ile Ser Glu Ile Gly Asp Gly Pro Arg Lys Cys

85 90 95
 Pro Arg Tyr Trp Ala Asp Asp Glu Val Gln Tyr Asp His Ile Leu Val
 100 105 110
 Lys Tyr Val His Ser Glu Ser Cys Pro Tyr Tyr Thr Phe Phe Tyr Val
 115 120 125
 Thr Asn Cys Lys Ile Asp Asp Thr Leu Lys Val Thr Gln Phe Gln Tyr
 130 135 140
 Asn Gly Trp Pro Thr Val Asp Gly Glu Val Pro Glu Val Cys Arg Gly
 145 150 155 160
 Ile Ile Glu Leu Val Asp Gln Ala Tyr Asn His Tyr Lys Asn Asn Lys
 165 170 175
 Asn Ser Gly Cys Arg Ser Pro Leu Thr Val His Cys Ser Leu Gly Thr
 180 185 190
 Asp Arg Ser Ser Ile Phe Val Ala Met Cys Ile Leu Val Gln His Leu
 195 200 205
 Arg Leu Glu Lys Cys Val Asp Ile Cys Ala Thr Thr Arg Lys Leu Arg
 210 215 220
 Ser Gln Arg Thr Gly Leu Ile Asn Ser Tyr Ala Gln Tyr Glu Phe Leu
 225 230 235 240
 His Arg Ala Ile Ile Asn Tyr Ala Met Cys Ile Leu Val Gln His Leu
 245 250 255
 Arg Leu Glu Lys Cys Val Asp Ile Cys Ala Thr Thr Arg Lys Leu Arg
 260 265 270
 Ser Gln Arg Thr Gly Leu Ile Asn Ser Tyr Ala Gln Tyr Glu Phe Leu
 275 280 285
 His Arg Ala Ile Ile Asn Tyr
 290 295

<210> 33
 <211> 308
 <212> PRT
 <213> Homo sapiens

<400> 33
 Gln Ser Asp Tyr Ser Ala Ala Leu Lys Gln Cys Asn Arg Glu Lys Asn
 1 5 10 15
 Arg Thr Ser Ser Ile Ile Pro Val Glu Arg Ser Arg Val Gly Ile Ser
 20 25 30
 Ser Leu Ser Gly Glu Gly Thr Asp Tyr Ile Asn Ala Ser Tyr Ile Met
 35 40 45
 Gly Tyr Tyr Gln Ser Asn Glu Phe Ile Ile Thr Gln His Pro Leu Leu
 50 55 60
 His Thr Ile Lys Asp Phe Trp Arg Met Ile Trp Asp His Asn Ala Gln
 65 70 75 80
 Leu Val Val Met Ile Pro Asp Gly Gln Asn Met Ala Glu Asp Glu Phe
 85 90 95
 Val Tyr Trp Pro Asn Lys Asp Glu Pro Ile Asn Cys Glu Ser Phe Lys
 100 105 110
 Val Thr Leu Met Ala Glu Glu His Lys Cys Leu Ser Asn Glu Glu Lys
 115 120 125
 Leu Ile Ile Phe Ile Leu Glu Ala Thr Gln Asp Asp Tyr Val Leu Glu
 130 135 140
 Val Arg His Phe Gln Cys Pro Lys Trp Pro Asn Pro Asp Ser Pro Ile
 145 150 155 160

T05090" 02337650

Ser Lys Thr Phe Glu Leu Ile Ser Val Ile Lys Glu Glu Ala Ala Asn
 165 170 175
 Arg Asp Gly Pro Met Ile Val His Asp Glu His Gly Gly Val Thr Ala
 180 185 190
 Gly Thr Phe Cys Ala Leu Thr Thr Leu Met His Gln Leu Glu Lys Glu
 195 200 205
 Asn Ser Val Asp Val Tyr Gln Val Ala Lys Met Ile Asn Leu Met Arg
 210 215 220
 Pro Gly Val Phe Ala Asp Ile Glu Gln Tyr Gln Phe Leu Tyr Lys Val
 225 230 235 240
 Ile Leu Ser Leu Val Ser Thr Arg Gln Glu Glu Asn Ala Leu Thr Thr
 245 250 255
 Leu Met His Gln Leu Glu Lys Glu Asn Ser Val Asp Val Tyr Gln Val
 260 265 270
 Ala Lys Met Ile Asn Leu Met Arg Pro Gly Val Phe Ala Asp Ile Glu
 275 280 285
 Gln Tyr Gln Phe Leu Tyr Lys Val Ile Leu Ser Leu Val Ser Thr Arg
 290 295 300
 Gln Glu Glu Asn
 305

<210> 34
 <211> 308
 <212> PRT
 <213> Homo sapiens

<400> 34
 Val Glu Cys Phe Ser Ala Gln Lys Glu Cys Asn Lys Glu Lys Asn Arg
 1 5 10 15
 Asn Ser Ser Val Val Pro Ser Glu Arg Ala Arg Val Gly Leu Ala Pro
 20 25 30
 Leu Pro Gly Met Lys Gly Thr Asp Tyr Ile Asn Ala Ser Tyr Ile Met
 35 40 45
 Gly Tyr Tyr Arg Ser Asn Glu Phe Ile Ile Thr Gln His Pro Leu Pro
 50 55 60
 His Thr Thr Lys Asp Phe Trp Arg Met Ile Trp Asp His Asn Ala Gln
 65 70 75 80
 Ile Ile Val Met Leu Pro Asp Asn Gln Ser Leu Ala Glu Asp Glu Phe
 85 90 95
 Val Tyr Trp Pro Ser Arg Glu Glu Ser Met Asn Cys Glu Ala Phe Thr
 100 105 110
 Val Thr Leu Ile Ser Lys Asp Arg Leu Cys Leu Ser Asn Glu Glu Gln
 115 120 125
 Ile Ile Ile Phe Ile Leu Glu Ala Thr Gln Asp Asp Tyr Val Leu Glu
 130 135 140
 Val Arg His Phe Gln Cys Pro Lys Trp Pro Asn Pro Asp Ala Pro Ile
 145 150 155 160
 Ser Ser Thr Phe Glu Leu Ile Asn Val Ile Lys Glu Glu Ala Leu Thr
 165 170 175
 Arg Asp Gly Pro Thr Ile Val His Asp Glu Tyr Gly Ala Val Ser Ala
 180 185 190
 Gly Met Leu Cys Ala Leu Thr Thr Leu Ser Gln Gln Leu Glu Asn Glu
 195 200 205
 Asn Ala Val Asp Val Phe Gln Val Ala Lys Met Ile Asn Leu Met Arg

210		215		220
Pro Gly Val Phe Thr Asp	Ile Glu Gln Tyr Gln	Phe Ile Tyr Lys Ala		
225	230	235	240	
Met Leu Ser Leu Val Ser Thr Lys Glu Asn Gly Asn Ala Leu Thr Thr				
	245	250	255	
Leu Ser Gln Gln Leu Glu Asn Glu Asn Ala Val Asp Val Phe Gln Val				
	260	265	270	
Ala Lys Met Ile Asn Leu Met Arg Pro Gly Val Phe Thr Asp Ile Glu				
	275	280	285	
Gln Tyr Gln Phe Ile Tyr Lys Ala Met Leu Ser Leu Val Ser Thr Lys				
	290	295	300	
Glu Asn Gly Asn				
305				

<210> 35

<211> 335

<212> PRT

<213> *Drosophila melanogaster*

<400> 35

Glu Thr Asn Leu Met Ala Glu Gln Val Glu Glu Leu Lys Asn Cys Thr				
1	5	10	15	
Pro Tyr Leu Glu Gln Gln Tyr Lys Asn Ile Ile Gln Phe Gln Pro Lys				
	20	25	30	
Asp Ile His Ile Ala Ser Ala Met Lys Gln Val Asn Ser Ile Lys Asn				
	35	40	45	
Arg Gly Ala Ile Phe Pro Ile Glu Gly Ser Arg Val His Leu Thr Pro				
	50	55	60	
Lys Pro Gly Glu Asp Gly Ser Asp Tyr Ile Asn Ala Ser Trp Leu His				
	65	70	75	80
Gly Phe Arg Arg Leu Arg Asp Phe Ile Val Thr Gln His Pro Met Ala				
	85	90	95	
His Thr Ile Lys Asp Phe Trp Gln Met Val Trp Asp His Asn Ala Gln				
	100	105	110	
Thr Val Val Leu Leu Ser Ser Leu Asp Asp Ile Asn Phe Ala Gln Phe				
	115	120	125	
Trp Pro Asp Glu Ala Thr Pro Ile Glu Ser Asp His Tyr Arg Val Lys				
	130	135	140	
Phe Leu Asn Lys Thr Asn Lys Ser Asp Tyr Val Ser Phe Val Ile Gln				
	145	150	155	160
Ser Ile Gln Asp Asp Tyr Glu Leu Thr Val Lys Met Leu His Cys Pro				
	165	170	175	
Ser Trp Pro Glu Met Ser Asn Pro Asn Ser Ile Tyr Asp Phe Ile Val				
	180	185	190	
Asp Val His Glu Arg Cys Asn Asp Tyr Arg Asn Gly Pro Ile Val Ile				
	195	200	205	
Val Asp Arg Tyr Gly Gly Ala Gln Ala Cys Thr Phe Cys Ala Ile Ser				
	210	215	220	
Ser Leu Ala Ile Glu Met Glu Tyr Cys Ser Thr Ala Asn Val Tyr Gln				
	225	230	235	240
Tyr Ala Lys Leu Tyr His Asn Lys Arg Pro Gly Val Trp Thr Ser Ser				
	245	250	255	
Glu Asp Ile Arg Val Ile Tyr Asn Ile Leu Ser Phe Leu Pro Gly Asn				
	260	265	270	

T05050"3298660

```
<210> 36
<211> 287
<212> PRT
<213> Yersinia sp.
```

$$\begin{aligned} \langle 210 \rangle & 37 \\ \langle 211 \rangle & 7 \end{aligned}$$

$\langle 220 \rangle$

<221> PHOSPHORYLATION

<400> 37

<210> 38

<211> 6

<212> PRT

 $\langle 220 \rangle$

<221> PHOSPHORYLATION

<400> 38

<210> 39

<211> 11

<212> PRT

 $\langle 220 \rangle$

<221> PHOSPHORYLATION

<400> 39

<210> 40

<211> 10

<212> PRT

 $\langle 220 \rangle$

<223> Substrate for PTBs synthesized from residues

500-509 of p56lck, the src-like lymphocyte specific protein tyrosine kinase that is a physiological substrate for CD45.

<221> PHOSPHORYLATION

<222> (6)...(6)

<400> 40

Ala Thr Glu Gly Gln Tyr Gln Pro Gln Pro
 1 5 10

103030" 92923260